

FILE 'MEDLINE, EMBASE, BIOSIS' ENTERED AT 17:03:34 ON 22 JUL 2004

L1	3192	S	"HEAT SHOCK PROMOTER" OR "HEAT INDUCIBLE PROMOTER" OR ("HEAT
L2	7164	S	HANSENULA OR POLYMORPHA
L3	1034	S	TREHALOSE-6-PHOSPHATE OR (TREHALOSE (S) PHOSPHATE)
L4	0	S	L1 AND L2 AND L3
L5	0	S	L1 AND L2
L6	2	S	L1 AND L3
L7	2	DUP REM	L6 (0 DUPLICATES REMOVED)
L8	428442	S	VECTOR OR PLASMID OR "EXPRESSION VECTOR" OR "EXPRESSION PLASM
L9	559	S	L8 AND L1
L10	1	S	L9 AND L3
L11	25	S	L8 AND L3
L12	17	DUP REM	L11 (8 DUPLICATES REMOVED)
L13	3	S	ROMANO/AU
L14	3	S	ROMANO/AU OR GELLISSEN/AU OR DEVIRGILIO/AU
L15	0	S	I ROMANO/AU
L16	1020	S	"STRESS RESPONSE" (P) PROMOTER
L17	3486	S	STRESS-PROMOTER OR (STRESS (S) PROMOTER)
L18	178	S	L16 AND L1
L19	538	S	L17 AND L1
L20	0	S	L18 AND L2
L21	0	S	L18 AND L2

L Number	Hits	Search Text	DB	Time stamp
1	7826	"heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:37
2	5480	hansenula or polymorpha	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:37
3	3	("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) SAME (hansenula or polymorpha)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:38
4	2129	("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) and (hansenula or polymorpha)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:38
5	85	((("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) and (hansenula or polymorpha)) NOT "pombe"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:39
6	26	((("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) and (hansenula or polymorpha)) NOT cerevisiae	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:39
7	1793	("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) SAME element	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:39
8	79	((("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) SAME element) and (hansenula or polymorpha)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:40
9	61	"stress response element"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:41
11	5	"trehalose-6-phosphate" and (hansenula or polymorpha)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:43
12	77984	protein WITH expression	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:44
13	3684	(protein WITH expression ) and (hansenula or polymorpha)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:44
14	2122	((protein WITH expression ) and (hansenula or polymorpha)) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:45
15	20	((protein WITH expression ) and (hansenula or polymorpha)) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter))) NOT (pombe or cerevisiae)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:46
16	325620	plasmid or vector	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:47
17	2128	(plasmid or vector ) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) and (hansenula or polymorpha)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:48

18	2	((plasmid or vector ) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)) and (hansenula or polymorpha)) and "trehalose-6-phosphate"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:49
19	3	"trehalose-6-phosphate" and (hansenula or polymorpha) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:50
20	4	"stress response element" and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:51
21	3665	(hansenula or polymorpha) and (protein WITH expression ) and (plasmid or vector )	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:52
22	2063	((hansenula or polymorpha) and (protein WITH expression ) and (plasmid or vector )) and "trehalose"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:52
10	154	"trehalose-6-phosphate"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:54
23	2044	((((hansenula or polymorpha) and (protein WITH expression ) and (plasmid or vector )) and "trehalose") and hansenula	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:56
24	1843	(((((hansenula or polymorpha) and (protein WITH expression ) and (plasmid or vector )) and "trehalose") and hansenula) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:56
25	1	"trehalose-6-phosphate" and (((((hansenula or polymorpha) and (protein WITH expression ) and (plasmid or vector )) and "trehalose") and hansenula) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter)))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:57
26	21	gellissen-g\$.in. or romano-iv\$.in. or devirgilio-c\$.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:59
27	3	(gellissen-g\$.in. or romano-iv\$.in. or devirgilio-c\$.in.) and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 16:59
28	1024	RHEIN.as.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 17:00
29	3	RHEIN.as. and ("heat shock promoter" or "heat inducible promoter" or ("heat shock" WITH promoter))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 17:00
30	2	RHEIN.as. and "trehalose-6-phosphate"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/07/22 17:01



Day : Thursday  
Date: 7/22/2004  
Time: 16:33:22

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ACCESSION NUMBER: 1999160656 EMBASE  
TITLE: Accumulation of **trehalose** by overexpression of  
tps1, coding for **trehalose-6-phosphate** synthase, causes increased resistance to  
multiple stresses in the fission yeast *Schizosaccharomyces pombe*.  
AUTHOR: Soto T.; Fernandez J.; Vicente-Soler J.; Cansado J.; Gacto M.  
CORPORATE SOURCE: M. Gacto, Dept. of Genetics and Microbiology, Facultad de  
Biologia, University of Murcia, 30071 Murcia, Spain.  
maga@fcu.um.es  
SOURCE: Applied and Environmental Microbiology, (1999) 65/5  
(2020-2024).  
Refs: 45  
ISSN: 0099-2240 CODEN: AEMIDF  
COUNTRY: United States  
DOCUMENT TYPE: Journal; Article  
FILE SEGMENT: 004 Microbiology  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB Recent studies have shown that **heat shock** proteins and **trehalose** synthesis are important factors in the thermotolerance of the fission yeast *Schizosaccharomyces pombe*. We examined the effects of **trehalose-6-phosphate (trehalose-6P)** synthase overexpression on resistance to several stresses in cells of *S. pombe* transformed with a plasmid bearing the *tps1* gene, which codes for **trehalose-6P** synthase, under the control of the strong thiamine-repressible **promoter**. Upon induction of **trehalose-6P** synthase, the elevated levels of intracellular **trehalose** correlated not only with increased tolerance to **heat shock** but also with resistance to freezing and thawing, dehydration, osmostress, and toxic levels of ethanol, indicating that **trehalose** may be the stress metabolite underlying the overlap in induced tolerance to these stresses. Among the isogenic strains transformed with this construct, one in which the gene coding for the **trehalose**-hydrolyzing enzyme, neutral trehalase, was disrupted accumulated **trehalose** to a greater extent and was more resistant to the above stresses. Increased **trehalose** concentration is thus a major determinant of the general stress protection response in *S. pombe*.

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ACCESSION NUMBER: 94283817 EMBASE  
DOCUMENT NUMBER: 1994283817  
TITLE: Yap1p, a yeast transcriptional activator that mediates  
multidrug resistance, regulates the metabolic stress  
response.  
AUTHOR: Gounalaki N.; Thireos G.  
CORPORATE SOURCE: Inst Molecular Biology Biotechnology, Foundation Research  
and Technology, PO Box 1527, Heraklion 711 10, Crete, Greece  
SOURCE: EMBO Journal, (1994) 13/17 (4036-4041).  
ISSN: 0261-4189 CODEN: EMJODG  
COUNTRY: United Kingdom  
DOCUMENT TYPE: Journal; Article  
FILE SEGMENT: 004 Microbiology  
022 Human Genetics  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB Overexpression of the YAP1 transcriptional activator renders yeast cells resistant to multiple metabolic inhibitors. In an effort to identify other gene products required for this phenotype we have isolated genomic

mutations which neutralize this effect. One such mutation was further characterized and the affected gene was shown to be identical to TPS2 which encodes **trehalose phosphate** phosphatase, an enzyme catalysing the second step in **trehalose** biosynthesis. We have analysed the transcriptional regulation of the TPS2 gene and have shown that its transcription is induced by a variety of stressful conditions caused by metabolic inhibitors, osmotic shock and **heat shock**. This transcriptional activation is mediated by multiple stress **promoter** elements (C4T) and requires the function of Yap1p as well as reduced activity of the cAMP-regulated protein kinase. Using an appropriate reporter gene we have shown that Yap1p is generally required for transcriptional regulation through the C4T stress element. These results show that the YAP1 protein has a pivotal role in the metabolic stress response and the acquisition of stress tolerance.

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